



**PROCESS OPTIMIZATION TO REDUCE DRAW STAGE FOR AN  
AUTOMOTIVE STAMPED PART**

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“I declared that this thesis is the result of my own work except the ideas and summaries which I clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree.”

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## ABSTRACT

Nowadays, large variety automotive parts are produced from deformation process. Sheet metal forming is one deformation process which transforms a metal blank into a component. Wrinkling and tearing is the most prevalent material instabilities that occur in sheet metals formed by stamping and deep drawing process. Autokeen Sdn. Bhd. faced a problem with the manufacturing process of the Bracket Assembly Spring Upper which manufactured by using semi-progressive die. The objective of this project is to compare the behaviour between the actual soft tooling and hard tooling (progressive die) with the simulation using DYNAFORM software. The simulation results focused on the formability of the part, thickness and the major strain distribution for each stage of the drawing process. Finally, the outcome of the project is the recommendation to optimize the processing steps by reducing the drawing steps to get lower cost and higher production efficiency.

## TABLE OF CONTENT

	<b>CONTENTS</b>	<b>PAGE</b>
	ACKNOWLEDGEMENT	I
	ABSTRACT	II
	TABLE OF CONTENT	III
	LIST OF FIGURES	VI
	LIST OF TABLES	XI
	LIST OF ABBREVIATIONS	XIII
<b>CHAPTER 1</b>	<b>INTRODUCTION</b>	
	1.1 Introduction of Project	1
	1.2 Objectives	2
	1.3 Problem Statement	2
	1.4 Scope	3
	1.5 Significance of Project	3
<b>CHAPTER 2</b>	<b>LITERATURE REVIEW</b>	
	2.1 Sheet Metal	4
	2.2 Deep Drawing	5
	2.3 Part Defects	7
	2.4 Soft-Tool	9